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Jawaharlal Nehru

“Step Out From the Old to the New”

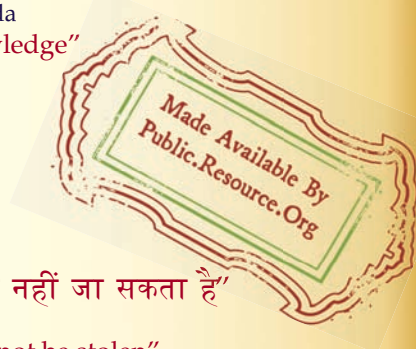
IS 6137 (1983): Gauging Members for Plain Plug Gauges, G0 and NO G0 Members (Size Range from 1 up to and Including 40 mm) [PGD 25: Engineering Metrology]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

(Reaffirmed 1998)

**SPECIFICATION FOR
GAUGING MEMBERS FOR PLAIN PLUG GAUGES,
GO AND NO GO MEMBERS
(SIZE RANGE FROM 1 UP TO AND INCLUDING 40 mm)
(Second Revision)**

1. Scope — Covers requirements for GO and NO GO gauging members for plain plug gauges in the size range from 1 up to and including 40 mm. These plain plug gauges can also be used to check the minor diameter of internal threads when made according to IS : 4218 (Parts 1 to 6) ' ISO metric screw threads '.

2. Material — Shall be as prescribed in IS : 7018 (Part 1) -1983 ' Technical supply conditions for gauges: Part 1 General (first revision) '.

3. Dimensions — Dimensions and tolerances for GO and NO GO gauging members for plain plug gauges shall be as specified in Table 1 read with Fig. 1 to 4.

3.1 The dimensions and tolerances shown in the table apply to the gauging members that have been hardened and finished on the taper shanks but left oversize on the gauging diameter for subsequent completion to the required size. The amount of excess material left to allow for finishing to size is at the discretion of the gauge manufacturer.

3.2 Centres — Gauging members up to and including 3 mm diameter may be ground with a ground 60° external centre at each end as shown in Fig. 1. The centre point shall be removed after the gauging member is finished to size.

3.2.1 Gauging members of all other sizes shall have a female centre according to IS : 2473-1975 ' Dimensions for centre holes (first revision) '. On sizes above 14 mm nominal diameter, a small protection recess is desirable.

**TABLE 1 DIMENSIONS FOR GO AND NO GO GAUGING MEMBERS FOR PLAIN PLUG GAUGES
(SIZE RANGE FROM 1 mm UP TO AND INCLUDING 40 mm)**

(Clause 3, and Fig. 1 to 4)

All dimensions in millimetres.

Nominal Dia d		L_1 $+0.3$ 0		L_2 0 -0.3		L_3 $+1$ 0	R	Basic Dia d_2	Relief s	Handle No.*
Above	Up to and Including	GO	NO GO	GO	NO GO					
1†	3	22	20	6.5	4.5	10	—	2.5	—	1
3	6	26	24	8	6	12	1	4	—	2
6	10	32	29	10	7	15	1.6	5.5	0.5	3
10	14	40	36	12	8	20	2	7	0.5	4
14	18	46	42	14	10	22	2.5	9	1	5
18	24	52	48	16	12	24	2.5	12	1	6
24	30	54	50	18	14	24	2.5	12	1	6
30	40	60	55	20	15	25	4	16	1.5	7

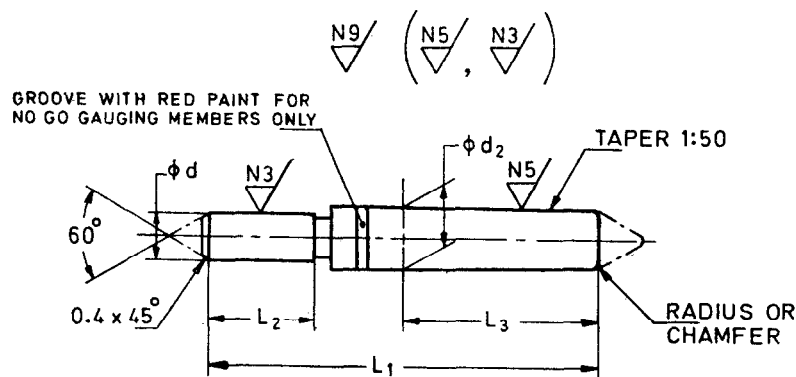
*IS : 5388-1983 ' Specification for hexagon handles for plain and threaded plug gauges (second revision) .

†Including.

Adopted 2 November 1983

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Note — For finishing of the ends, see 3.2.

FIG. 1 GO AND NO GO GAUGING MEMBERS FROM 1 mm UP TO AND INCLUDING 3 mm DIAMETER TO BE FINISHED WITHOUT CENTRE

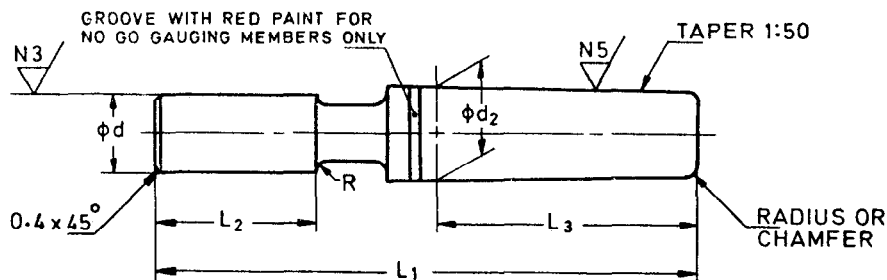


FIG. 2 GO AND NO GO GAUGING MEMBERS ABOVE 3 mm UP TO AND INCLUDING 6 mm DIAMETER

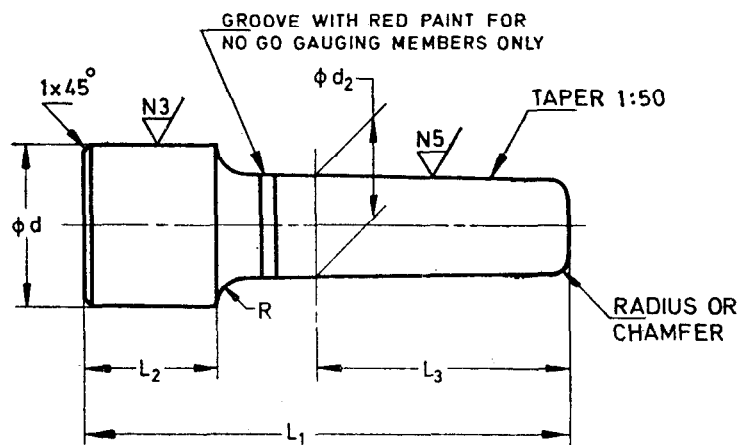
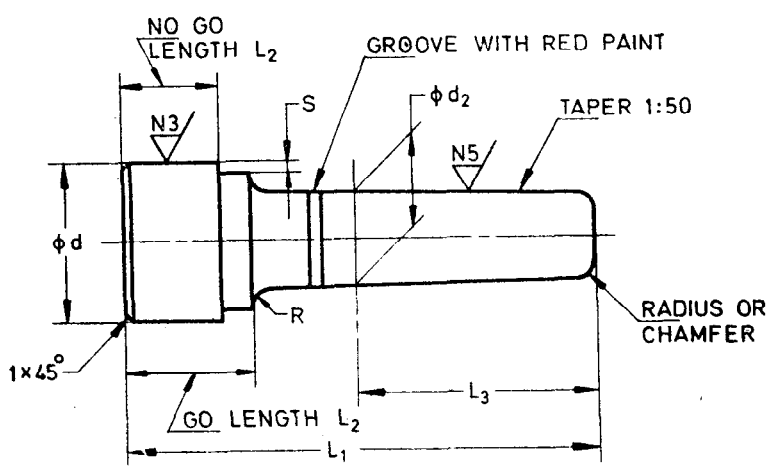


FIG. 3 GO AND NO GO GAUGING MEMBERS ABOVE 6 mm UP TO AND INCLUDING 40 mm DIAMETER



Note — $L_1 = L_1$ of GO (see Table 1).

FIG. 4 ALTERNATIVE FOR NO GO GAUGING MEMBERS MADE FROM GO BLANKS ABOVE 6 mm UP TO AND INCLUDING 40 mm DIAMETER

4. Gauging Dimensions — Gauging dimensions for plain plug gauges shall conform to IS : 3455-1971 'Gauging practice for plain workpieces (*first revision*)' and IS : 2334-1975 'Gauging practice for ISO metric screw threads (*first revision*)' for checking plain workpieces and minor diameter of internal threads respectively.

5. Taper Shank — Shall be made to fit the taper ring gauges applicable to its size according to IS : 9529-1980 'Taper plug gauges and taper ring gauges to check taper bore of gauge handles and taper shanks of gauging members'.

6. Air Grooves — For gauges used for checking blind holes, suitable air grooves shall be provided for gauging sizes above 6 mm.

7. Designation

7.1 Gauging members for plain plug gauges shall be designated by nominal size of the hole and tolerance class according to IS : 919 (Part 1)-1963 'Recommendations for limits and fits for engineering: Part 1 General engineering (*first revision*)'.

Example:

A GO or NO GO gauging member for plain plug gauge to check a hole of nominal size 25 mm and tolerance class H8 shall be designated as:

GO Gauging Member 25 H8 IS : 6137.

NO GO Gauging Member 25 H8 IS : 6137.

7.2 If tolerances other than those according to IS : 919 (Part 1)-1963 are required, gauging members for plain plug gauges shall be designated by the nominal size of the hole and its limits.

Example:

A GO or NO GO gauging member for plain plug gauge to check a hole of nominal size 25 mm and with tolerance of $+0.04$ shall be designated as:

GO Gauging Member $25 + \frac{0.04}{0}$ IS : 6137.

NO GO Gauging Member $25 + \frac{0.04}{0}$ IS : 6137.

7.3 Gauging members for checking the minor diameter of internal ISO metric screw threads shall be designated by the nominal size of the thread and the tolerance class according to IS : 4218 (Part 4)-1976 'ISO metric screw threads: Part 4 Tolerancing system (*first revision*)'.

Example:

A GO or NO GO gauging member for plain plug gauge to check the minor diameter of internal ISO metric screw thread of size M24 and tolerance class 6H on the minor diameter shall be designated as:

GO Plain Gauging Member M 24-6H IS : 6137.

NO GO Plain Gauging Member M 24-6H IS : 6137.

7.4. Gauging members used for checking a blind hole shall be designated with a prefix BH before the size.

Example:

A GO or NO GO gauging member for plain plug gauge to check a blind hole 25 H8 shall be designated as:

GO Gauging Member BH 25 H8 IS : 6137.

NO GO Gauging Member BH 25 H8 IS : 6137.

8. **General Requirements** — Other requirements for gauging members for plain plug gauges not covered in this standard shall be as given in IS : 7018 (Part 1)-1983.

9. **Marking** — Shall be in conformity with IS : 7018 (Part 1)-1983.

9.1 NO GO gauges shall be painted with red paint on the groove provided on the taper shank of the gauging member.

9.2 **Certification Marking** — Details available with the Bureau of Indian Standards.

EXPLANATORY NOTE

This standard was originally published in 1971. First revision was brought out in 1980 to align the standard with ISO 3670-1979 'Blanks for plug gauges and handles (taper lock and trilock) and ring gauges — Design and general dimensions', issued by the International Organization for Standardization.

This standard has now been revised again to bring it in line with the latest manufacturing practices followed in India. Modifications have been made in Fig. 1 to 3.

The design of the gauging members in the ranges specified in this specification is of taper lock type. The taper lock design is particularly suitable for the smaller sizes of plug gauges. This type of gauge is economical to produce and maintain.

It is a feature of the taper lock system that the gauging members are locked firmly in the handles by engagement of the taper shanks in the taper holes and when properly made and assembled, they have the rigidity of solid gauges. Dimensions and tolerances for the mating parts of gauging members and handles have been so chosen as to ensure full interchangeability of these parts wherever manufactured. A drift slot or hole is provided near one end of the handle to enable the gauging member to be removed when replacement is necessary. In the case of double ended gauges, the second member is removed by running a rod through them.

Size ranges above 40 mm up to and including 120 mm and above 120 mm up to and including 250 mm have been covered in IS : 6244-1980 'Specification for gauging members for plain plug gauges, GO and NO GO members (size range above 40 up to 120 mm) (first revision)' and IS : 6246-1980 'Specification for gauging members for plain plug gauges, GO and NO GO members (size range above 120 up to 250 mm) (first revision)'.